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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,651	01/20/2004	Gregory Edward Tierney	200313615-1	9869

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FORT COLLINS, CO 80527-2400

EXAMINER

PHAN, RAYMOND NGAN

ART UNIT	PAPER NUMBER
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2111

MAIL DATE	DELIVERY MODE
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09/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/760,651

Applicant(s)

TIERNEY ET AL.

Examiner

Raymond Phan

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-24 is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-10, 12, 25 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 4-7, 11, 26-28, 32-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Part III DETAILED ACTION

Notice to Applicant(s)

1. This action is responsive to the following communications: remarks filed on June 23, 2007.
2. This application has been examined. Claims 1-35 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2-3, 8-10, 12, 25, 29-31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cypher et al. (US No. 7,222,220) in view of Arimilli et al. (US Pub No. 2002/0129211).

In regard to claims 1, 10, 25, 29, Cypher et al. disclose a system comprising: a home node that receives a first request for data from a first node according to a first cache coherency protocol (see col. 5, lines 23-33) and provides a second request for the data based on the first request (see col. 9, lines 57-65); a second node that provides a conflict response to the second request (see col. 7, lines 44-62). Cypher et al. further disclose the selection of two different coherencies (6, lines 17-44). Cypher et al. do not specifically disclose second node that provide the conflict response indicating that an ordering point for the data is migrating according to a second cache coherency protocol. However Arimilli et al. disclose node that provide the conflict response indicating that an ordering point for the data is migrating according to a second cache coherency protocol (see para 26, 32).

Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Arimilli et al. within the system of Cypher et al. because it would determine what necessary action should be taken.

In regard to claim 2, Arimilli et al. disclose wherein the home node provides a retry request associated with the second request for the data in response to the conflict response from the second node (see para 43). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Arimilli et al. within the system of Cypher et al. because it would determine what necessary action should be taken.

In regard to claim 3, Arimilli et al. disclose wherein, in response to the retry request associated with the second request, the home node and the first node each receives a response that includes a copy of the data which completes the request for the data from the first node according to the first cache coherency protocol (see para 43). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Arimilli et al. within the system of Cypher et al. because it would determine what necessary action should be taken.

In regard to claims 8-9, 30, Cypher et al. disclose wherein the first cache coherency protocol comprises a forward progress cache coherency protocol (i.e. directory-based protocol) (see col. 5, lines 23-33).

In regard to claim 31, Cypher et al. disclose a multi-processor computer system comprising: a home node provides at least one snoop to obtain a copy of a line of data in response to a request provided by a first processor in directory-based coherency protocol (see col. 5, lines 23-33), the home node reissues the snoop

request from the home node in response to receiving a response at the home node (see col. 9, lines 57-65). But Cypher et al. do not specifically disclose the response associated with migration of an ordering from a cache of the first processor to a cache of a second processor. However Arimilli et al. disclose the response associated with migration of an ordering from a cache of the first processor to a cache of a second processor (see para 26, 32). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Arimilli et al. within the system of Cypher et al. because it would determine what necessary action should be taken.

Allowable Subject Matter

5. Claims 12-24 are allowable over the prior of records.
6. Claims 4-7, 11, 26-28, 32-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The reason for allowance of claims 4-7, 11-15, 18-24, 26-28, 32, 35 can be found in the previous Office Action.

Response to Amendment

8. Applicant's amendment and arguments, see pages 9-14, filed on June 23, 2007, with respect to the rejections of claims 1-3, 8-12, 16-17, 25, 29-34 under 35USC103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new grounds of rejection is made in view of Cypher et al. and Arimilli et al.

Conclusion

9. Claims 1-3, 8-10, 25, 29-31 are rejected. Claims 4-7, 11, 26-28, 32-35 are objected. Claims 12-24 are allowed.
10. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

Cypher (US No. 6,877,056) discloses a system with arbitration scheme supporting virtual address networks and having split ownership and access right coherence mechanism.

Rowlands et al. (US No. 7,171,521) disclose a coherency shared memory processing system.

Arimilli et al. (US No. 6,138,218) disclose a forward progress on retried snoop hits by altering the coherency state of a local cache.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (571) 272-3630. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM. The Group Fax No. (571) 273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see [hop://pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 central telephone number is (571) 272-2100.


Raymond Phan
Patent Examiner
Tech Center 2100